Taxpayer Information Services

Juran Quality Improvements
applied to the TIS Statistical Reporting System

Summary Report

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The Ontario Ministry of Revenue

Taxpayer Information Services

Juran Quality Improvements
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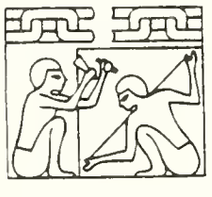
Summary Report



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Taxpayer Information Services

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Taxpayer Information Services

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Abstract

Through its Taxpayer Services Branch, the Ontario Ministry of Revenue provides telephone information services for taxpayers and grant recipients, to augment published material and facilitate their voluntary compliance with a diverse range of statutes. During fiscal year 1989/90 a total of over 617,000 telephone enquiries were processed, following an average yearly increase of 40% during the preceding two years.

In addition to satisfying the immediate taxpayer information needs, this volume of enquiries also produces a good source of feedback on a variety of important issues. The resulting information provides feedback for internal - program branch - clients, a starting point for remedial action leading to enhanced program compliance through higher customer service levels, as well as an early reaction to Budget and major policy announcements for the provincial Treasury. Optimum quality standards call for rapid processing of this data, which must also be virtually error-free.

This report described the stages and processes followed for identifying and remedying causes of errors which affect the TSB statistical data reporting system. Employing the principles of Juran Quality Improvement, the project team faced special challenges: Data obtained to classify customer service activity is part of a spontaneous exchange between information officer and customer, also known as "moment of truth".

As a direct outcome of this project it was possible to reduce the original error rate from 7.6% to 2.6%, a 67% quality improvement, with good prospects for further improvements in the months ahead.

Telephone Enquiry Call Classification:
Basic and Systems Error Rates

based on Tests conducted during Period June 13 to 20, 1990 and September 24 to 28, 1990

Analysis Summaries:

		June, 1990	Sept., 1990
Number of Calls reviewed:		247	723
Total Information Items tested:	Basic	1,482	4,338
	System	3,128	
Total Number of Differences:		172	228

Average Error Rates:		
Basic Classification Error:	5.8%	2.6%
Systems Data Input Error:	1.8%	
Average Total Error Rate:	**7.6%**	**2.6%**
Standard Deviation:	0.0379	0.0179

Change in Total Average Error Rates:

Average Error Rate in June/90: 7.6 %, plus or minus 0.9 %

Average Error Rate in Sept./90: 2.6 %, plus or minus 0.4 %

Taxpayer Information Services

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Background

Until late last year client enquiries were initially categorized and statistically documented on paper by the information officer after each customer service exchange. Frequently completed under high workload pressures as a secondary function, this process would result in errors, the magnitude of which could not always be detected in time. This situation made statistical reconciliation and analysis difficult.

To overcome these shortcomings and speed up processing of data, a computer program was introduced in March, 1990. The solution was expected to provide higher report quality, for use by product line branches and Treasury than the previous, manually produced reports permitted.

As an interim solution, paper forms continued in use for initial categorization of calls according to a variety of criteria. A dedicated group entered this data into the computer for subsequent overnight processing and production of printed reports.

Planning of further system enhancements were already in progress, intended to permit direct data entry by Program Information Officers (PIOs), thereby eliminating the need for paper source documents and a separate data entry staff. This system expansion was due to come on line early in September.

Early results were impressive and beyond initial expectations. With growing demand for feedback, especially taxpayers' reactions to new revenue programs and the 1990 provincial Budget, the need for minimizing the impact of all errors on processing, analysis and reporting of taxpayer feedback made this an opportune project for selection as a Juran Quality Improvement initiative.

Team Formation

As part of quality awareness training, a project team was formed in May, 1990, to identify symptoms and the most probable causes of errors, and develop remedies to optimize the quality of statistical information. The team consisted of two information centre supervisors - one designated as team leader, a marketing services analyst (serving as diagnostician and secretary), a senior manager and the branch director. Names of these and other participants are listed in Appendix A, on page 21.

The Project Challenge

The "Moment of Truth" in Customer Services

Before describing the approach to the quality improvement project in detail, it is considered appropriate to define a couple of important principles affecting the customer services environment.

Ever since its creation in 1981, the Taxpayer Services Branch has been committed to providing superior customer service to its internal and external clients. In this respect, all interaction with clients were - and continue to be - driven by a single, inviolate principle: the customer may not always be right, but the customer always comes first.

Regardless how well the service is perceived to be by the provider, its real value is subject to the appreciation by the customer. The 'moment of truth' occurs at the point in time when Program Iinformation Officer (PIO) and customer come into contact. This concept is well demonstrated in a model developed by Karl Albrecht and L.J.Bradford in their recently published book THE SERVICE ADVANTAGE, as illustrated in Figure 1 below:

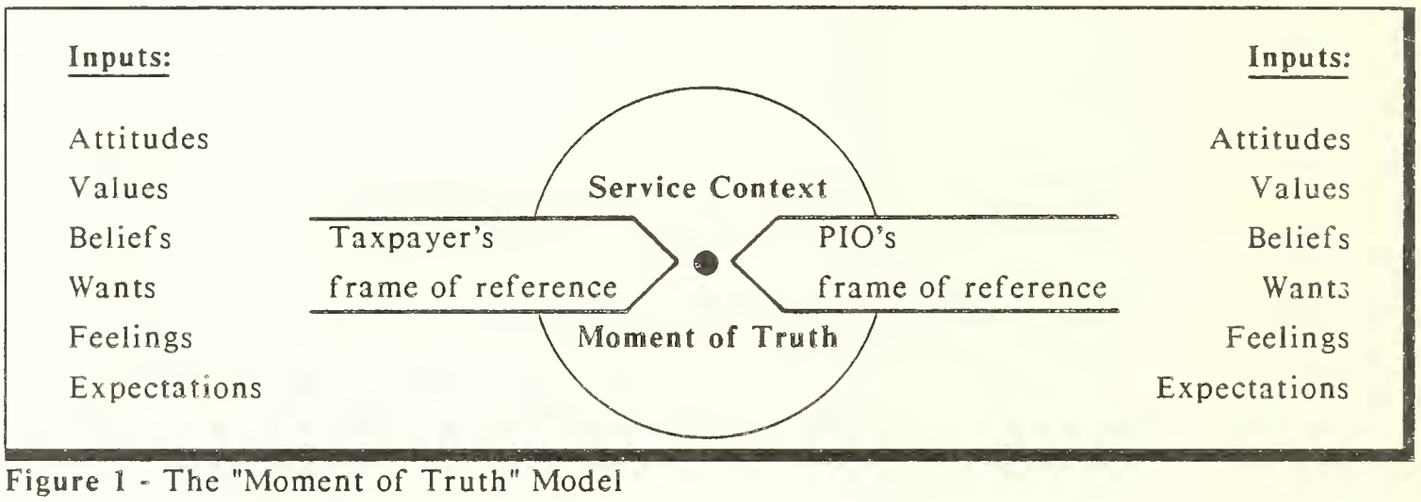


Figure 1 - The "Moment of Truth" Model

The "Error Rate"

The same principles employed in the 'moment of truth' model, i.e. that the client may not always be right - nor wrong for that matter - was used as basis for determining the 'error rate' in this project. The methodology and data for determining the error rate was derived from two PIOs assessing and documenting the same taxpayer transactions independent from one another.

The results of the two source documents were then compared and noted as 'differences', rather than errors. Since in most instances it was impossible to judge who was wrong, resultant differences were halved to provide the 'Error Rate'. With the exception of systems error defined later, this process was employed for classification purposes throughout this project.

Project Selection

Several projects with high potential for quality improvement were reviewed in green-lighting sessions. On balance, the team selected the most urgent one that also held greatest potential in all-round benefits: **"The quality improvement of customer services statistical data used for management information and feedback reports".**

The development of this project was structured in five phases:

1. Establishing initial error rates
2. Analysis of results for symptoms and most probable causes(s)
3. Identification of effective remedies
4. Implementation of changes
5. Continuing to monitor the system

Phase 1: Establishing the Initial Error Rates

After initial review of the interim data collection system, it was agreed that there was potential for error in two separate processing areas:

1. During the initial classification of each taxpayer information exchange by program information officer (PIO), and completion of a data entry form;
2. During the processing phase by data entry clerks, entering the classification data into the computer from entry forms completed by PIOs.

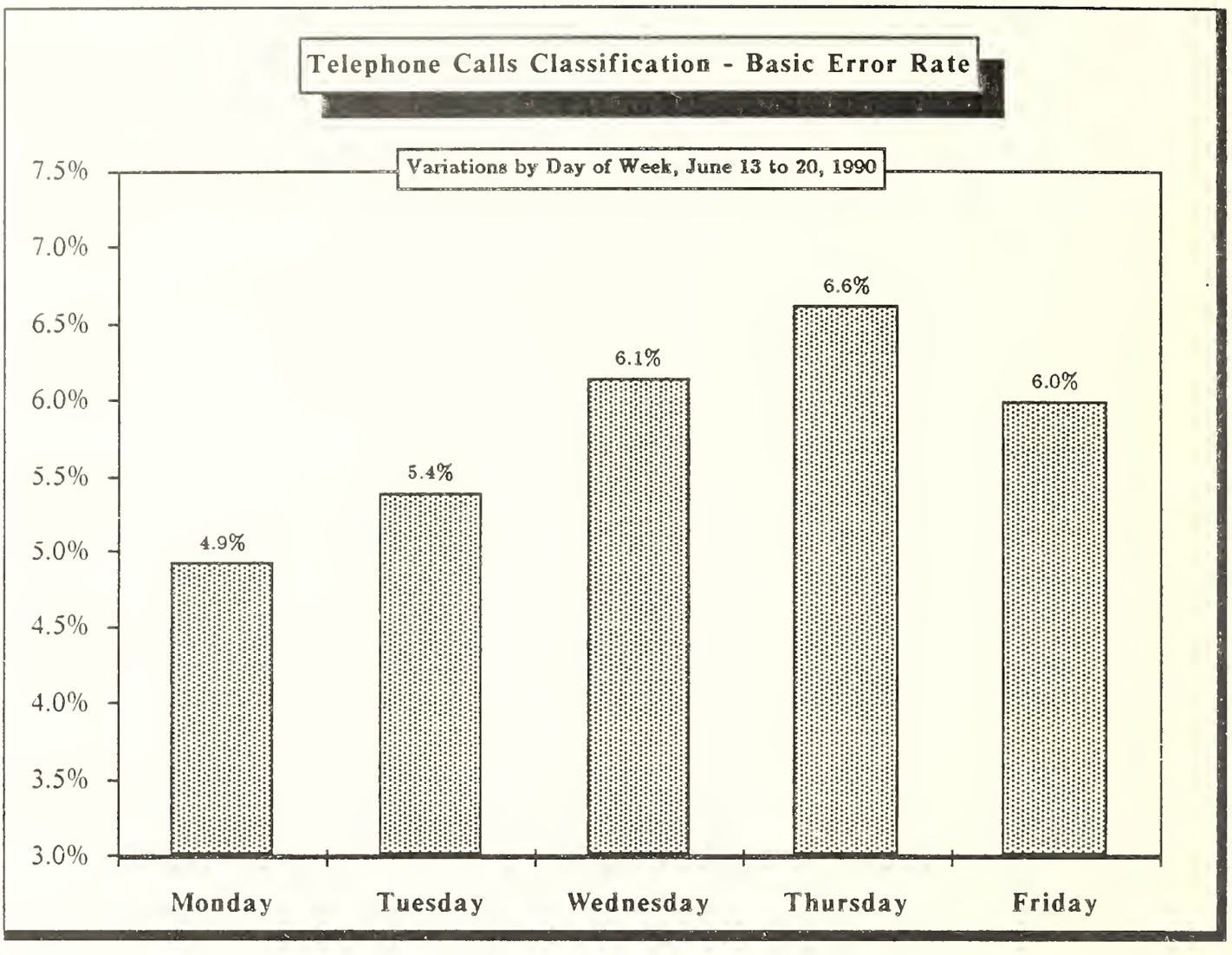
Beginning in early September and following further development of the statistical data capture system, both functions were then to be completed by PIOs. The present configuration therefore presented an ideal opportunity for identifying possible error rates separately for each of these two areas.

The Data Entry Form

The data entry form completed by Program Information Officers, allowed for classification of incoming telephone calls according to 6 criteria required by management for planning purposes and feedback reporting:

- Program detail
- Service/Action completed
- Client Disposition
- Type of Client or Agent
- Language
- Type of Contact

These categories are identified in more detail in Appendix 'B', on pages 22 & 23.



Weekday		Sample Size	Number of Errors	Average % Error
Monday	(13&20-Jun)	396	39	4.9%
Tuesday	(6/14/1990)	204	22	5.4%
Wednesday	(6/15/1990)	342	42	6.1%
Thursday	(6/18/1990)	348	46	6.6%
Friday	(6/19/1990)	192	23	6.0%
Totals:		1,482	172	5.8%

Figure 2 - Variation of Error Rate by Weekday

Basic Call Classification Error

Arrangements were made to identify the classification error through sampling of 247 incoming calls, involving PIOs during the 6-day period from June 13 to June 20. A total of 1,482 transaction items was reviewed, as shown on the preceding page, in Figure 2. At first sight, the resulting average classification error rate of 5.8% revealed relatively minor daily variations for the six day period covered. As data analysis progressed, however, it became **evident that there were major variations for some call classification categories, most notably with Service/action description, client disposition and type of client**, as shown in Figure 3:

Program Area	Sample Size	Number of Errors	Average % Error
Program Detail Classification	247	12	2.4%
Service/Action Description	247	41	8.3%
Client Disposition	247	52	10.5%
Type of Client	247	62	12.6%
Language	247	1	0.2%
Type of Contact	247	4	0.8%
Totals	1,482	172	5.8%

Figure 3 - Variation of Error by Program Area

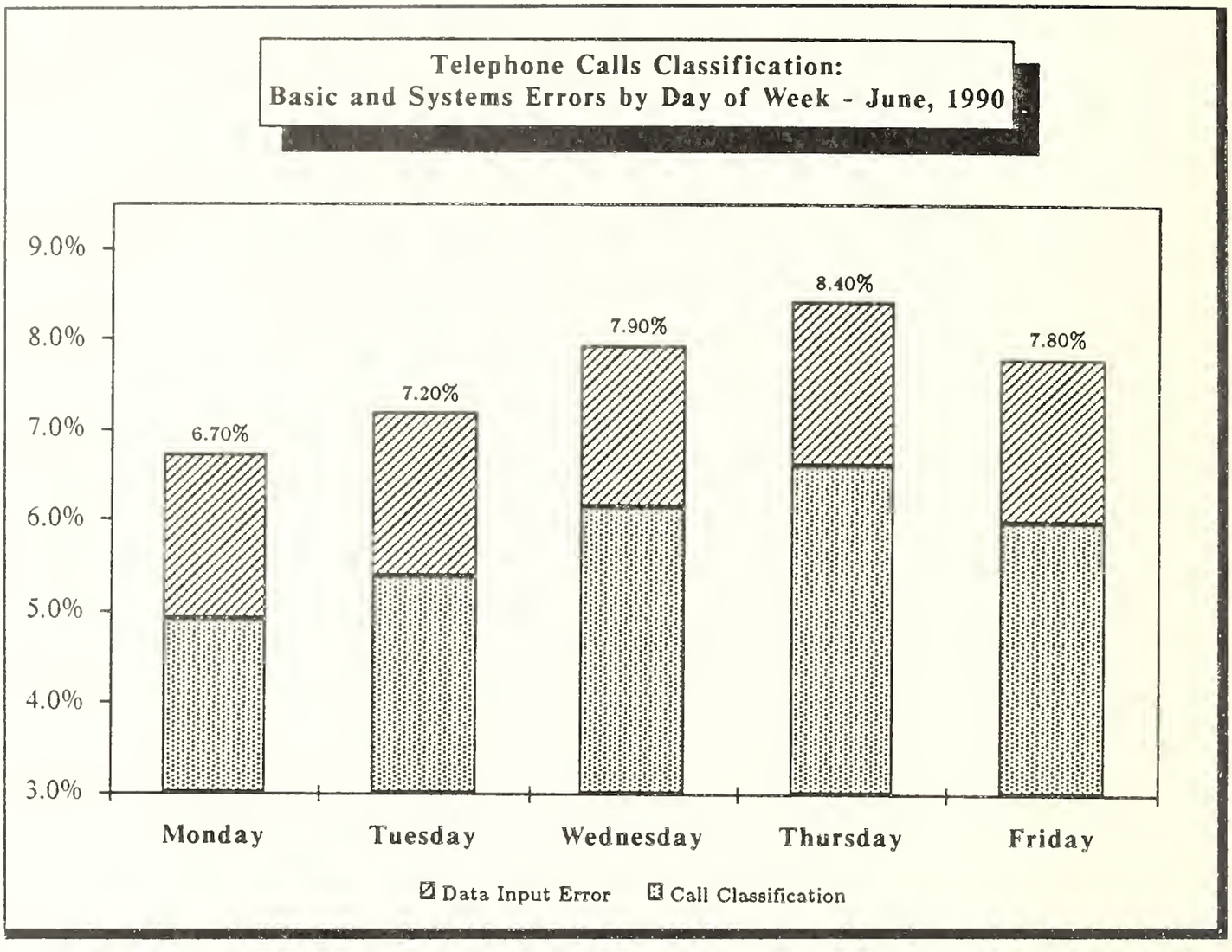
Data Input Error

Call classification data was processed by input clerks on the next day, using the call sheets as source documents. Comparison of call sheets prepared by PIOs to the computer output reports, allowed the 'data input error' to be determined. A somewhat larger sample, 3,128 data items, was used for this purpose, resulting in an average input error of 1.8%, plus or minus 0.2%, (see Appendix 'C', on pages 24 and 25).

Total Error Rate

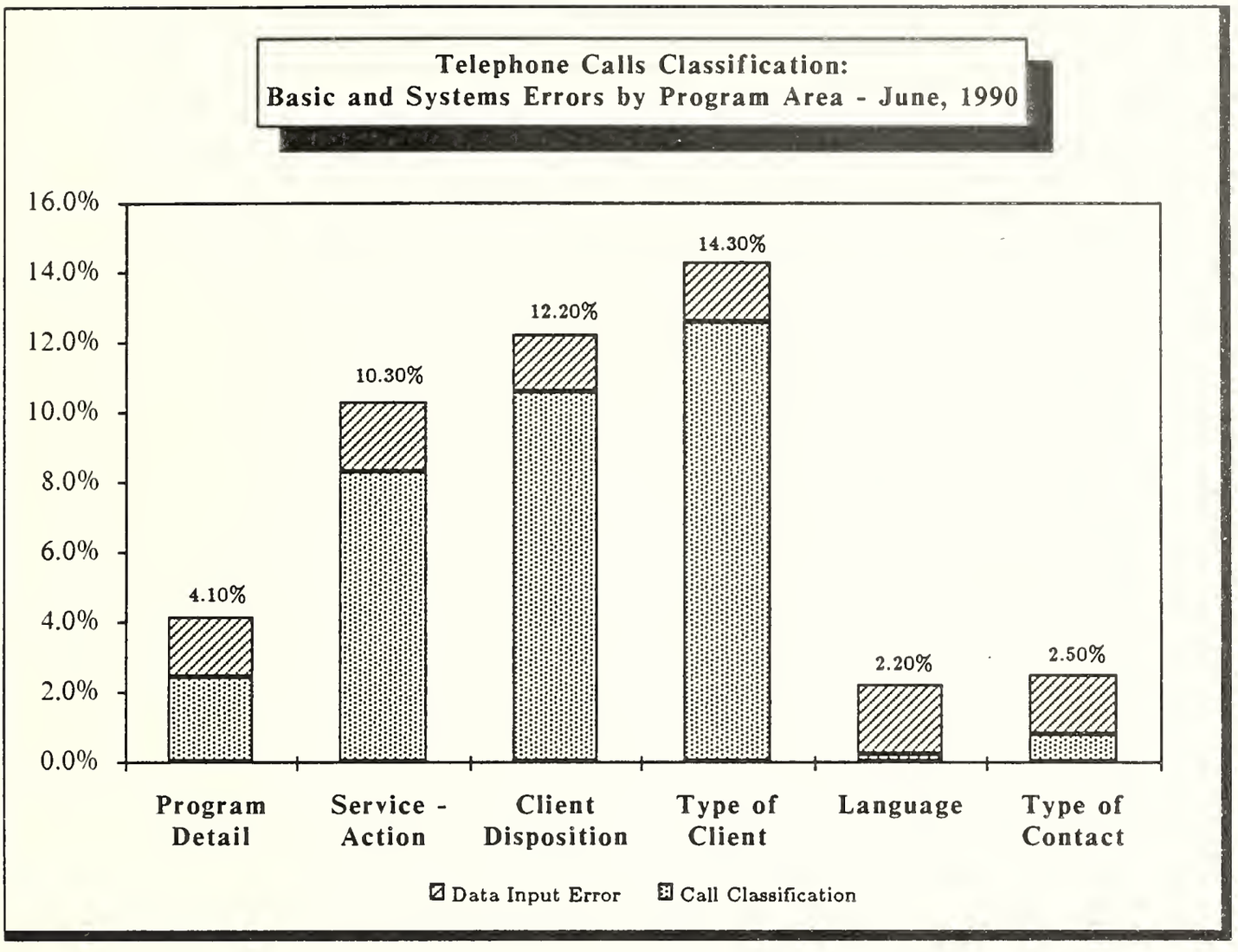
As illustrated on the next 2 pages,

the average 'classification' and 'systems input errors' combined amount to an error rate of 7.6%, plus or minus 0.9%.



Weekday	Sample Size	Classification Errors	Average % Error	System Input Error	Total % Error
Monday	396	39	4.9%	1.8%	6.7%
Tuesday	204	22	5.4%	1.8%	7.2%
Wednesday	342	42	6.1%	1.8%	7.9%
Thursday	348	46	6.6%	1.8%	8.4%
Friday	192	23	6.0%	1.8%	7.8%
Totals:	1,482	172	5.8%	1.8%	7.6%

Figure 4 - Variation of Error Rate by Weekday



Program Area	Sample Size	Classification Errors	Average % Error	System Input Error	Total % Error
Program Detail Class.	247	12	2.4%	1.7%	4.1%
Service/Action Descript.	247	41	8.3%	2.0%	10.3%
Client Disposition	247	52	10.5%	1.7%	12.2%
Type of Client	247	62	12.6%	1.7%	14.3%
Language	247	1	0.2%	2.0%	2.2%
Type of Contact	247	4	0.8%	1.7%	2.5%
Totals	1,482	172	5.8%	1.8%	7.6%

Figure 5 - Variation of Error Rate by Program Area

Phase 2: Analysis of results for symptoms and most probable causes(s)

While reviewing the results of the June survey, the team recognized that the classification and processing of enquiry-related data was subject to a variety of factors. In identifying these, it was decided to focus more closely on the three areas having the greatest impact on data integrity: **Method, Classification processes and Management issues.** These and various other issues affecting **data quality limitations** are illustrated in the Cause and Effect diagram below:

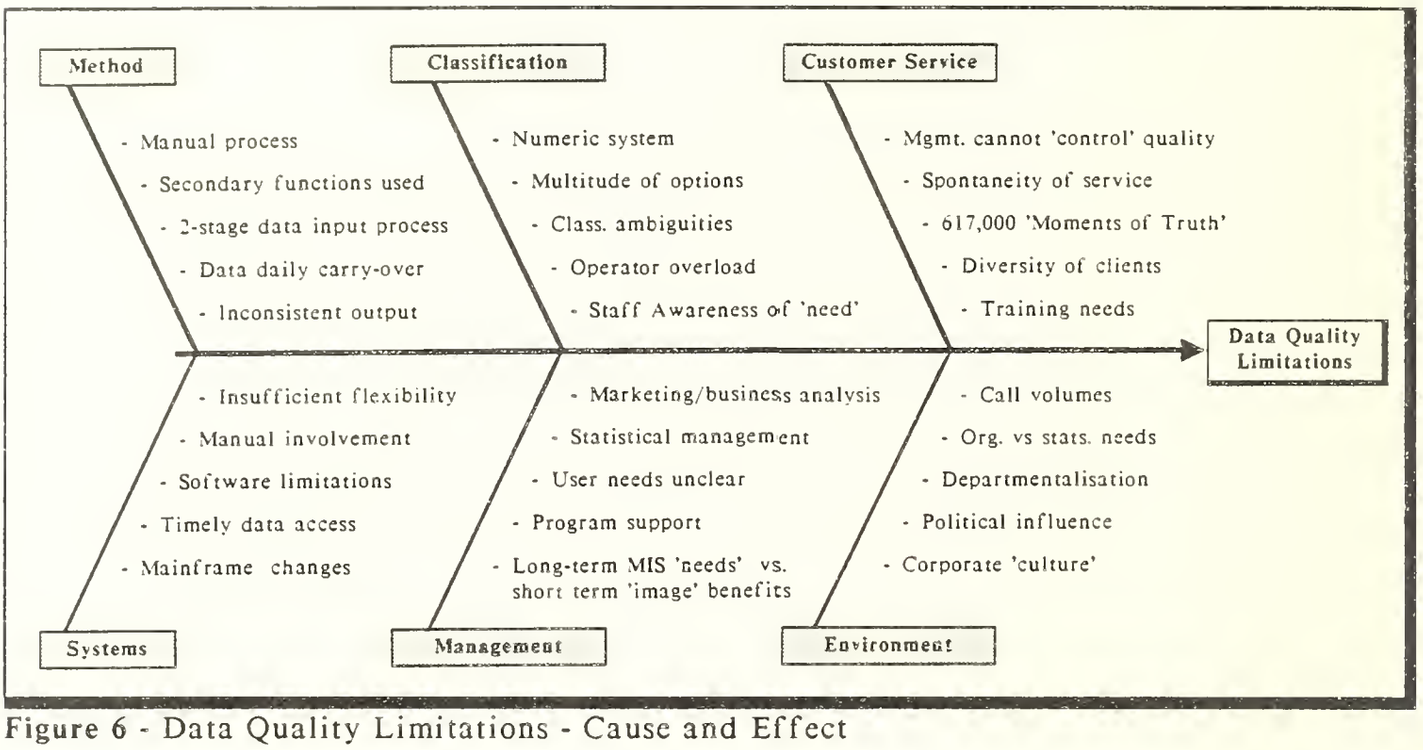


Figure 6 - Data Quality Limitations - Cause and Effect

Systems processes were already being modified as part of a separate project, and with an anticipated change in Branch direction, management issues were deferred for now.

Call Classification

The classification system in use during the team's first sampling in June - as listed in Appendix B on pages 22 & 23 - also formed the basis for the enhanced computer program then under development. After noting the variations in basic error rates as revealed in Figures 3 and 5 on the last two pages, it rapidly became evident that the classification system contained a number of causes for ambiguity and/or confusion - resulting in call data-classification errors. After discussion, the major causes were identified as:

1. **The numeric encoding system** - hard to relate to program items - was suspected to be more prone to undetectable classification errors, than a mnemonic alpha-coding system;

2. **The multitude of options** within classification categories, which could be resolved more easily by computer, rather than manually and under pressure;

3. **Ambiguities related to sub-categories,** such as:
   - Excessive Program detail beyond the major Statute Groups
   - Service/Action, (completed action versus a variety of reports, publications),
   - Client Disposition, (four negative to one positive and two neutral),
   - Client Type, (lack of clarity between client and their agents), and
   - Language, (with only two official options, there were 5 encoding categories);
4. **Lack of operator convenience**, i.e. keyboard friendliness and error potential due to workload pressures;
5. **Low staff awareness of the need** for accurate statistics was also evident from some of the forms completed.

Phase 3: Developing Quality Improvement (QI) Remedies

All the preceding problem causes were addressed and alternatives solution found. The numeric system was replaced with a mnemonic alpha coding system, relating as much as possible to the classification items. During practical testing and later training, **most operators were able to accurately recite and apply the new classification codes within minutes.**

With a focus on task simplification and user logic, the list of ambiguous options was reduced rationally. **Emphasis was also placed on having the computer process as much detail as possible,** using data cross-tabulation methodology, **rather than rely on PIO decision-making under pressure.**

Keyboarding convenience was also considered to lighten the PIO workload, by minimizing the finger distance between key strokes, without sacrificing the mnemonic benefits. This need was achieved by using a double-letter entry code, in place of traversing the keyboard to maintain a more memorable letter combination.

Low staff awareness of statistical needs is now being overcome through increased emphasis during continuing, regular PIO training sessions.

Phase 4: Implementation of Changes

All changes outlined above were incorporated in a new code system, user-tested and modified prior to being incorporated in systems development. The resulting new TIC Call Classification Code sheet is shown on the next page; the complete version, with definitions, is included at Appendix 'D' on pages 26 & 27; (for comparison, also see Appendix 'B' on pages 22 & 23).

Owing to the amount of work and changes involved, it was a delight to see the ITD team respond as well as they did - during the height of the Summer vacation season - to implement all changes as requested. They excelled in delivering a program solution and data entry screen that goes a long way towards reducing the causes of data input error.

TIC CALL CLASSIFICATION

Revised Working Version

Revenue Programs:

GITC (GI)	EHT (EH)	MFTT (MF)
OG OTG	EH EHT	LL Land Tax
GA GAINS	OH OHIP Coverage	SB SBDC
OC OTC	OO Other EHT	IJ IJC's
OH OHOSP		GF Gas/Fuel Tax
OO Other GITC		PP Propane
		TT Tobacco Tax
		OO Other MFTT
CT (CT)	**RST (RS)**	**Assessment (AS)**
CT Corporations Tax	RS Retail Sales Tax	AS Assessment
OO Other CT	OI Ontario Incredible	EN Enumeration
	OO Other RST	CC CCT
		OO Other Assessment
Federal Programs (FD)	**Ontario Budget (BU)**	**Other Programs (OP)**
RC Revenue Canada	800 Series to 899:	TA Tax Appeals
OA OAS / GIS	To be determined	FO FOI
EX Excise		OO Other
GS GST		
OO Other Federal		

Service / Action:

IP	Information Provided, incl. TU
AA	Application Assistance
RE	Report
ME	Message
RG	Registration
TR	Tax Roll Maintenance
CX	Close-Outs
PU	Publications / Forms Requests
OO	Others

Type of Client:

CC	Client
MP	MPP / MP
OO	Anyone other than the client or MP / MPP

Language:

EE	English
FR	French
OO	All Others

Client Disposition:

	At Start of Call	-	At End of Call
NS	Neutral	-	Satisfied
ND	Neutral	-	Dissatisfied
IS	Irate	-	Satisfied
ID	Irate	-	Dissatisfied

Type of Contact:

IN	In-coming Enquiry
OU	Out-going Enquiry
WI	Walk-in Clients: (MORIC and PEC)
OO	Others

Phase 5: Monitoring Process - The Results

Three weeks after initiating the revised computer system, between September 24 and 28th, 1990, the impact of the implemented changes was tested among staff, employing the same process as previously developed and described for the June survey.

The initial result was a noticeable overall improvement, with a reduction of the average error rate, inclusive of data input, from 7.6% to 2.6%. This improvement is illustrated below, in Figure 7:

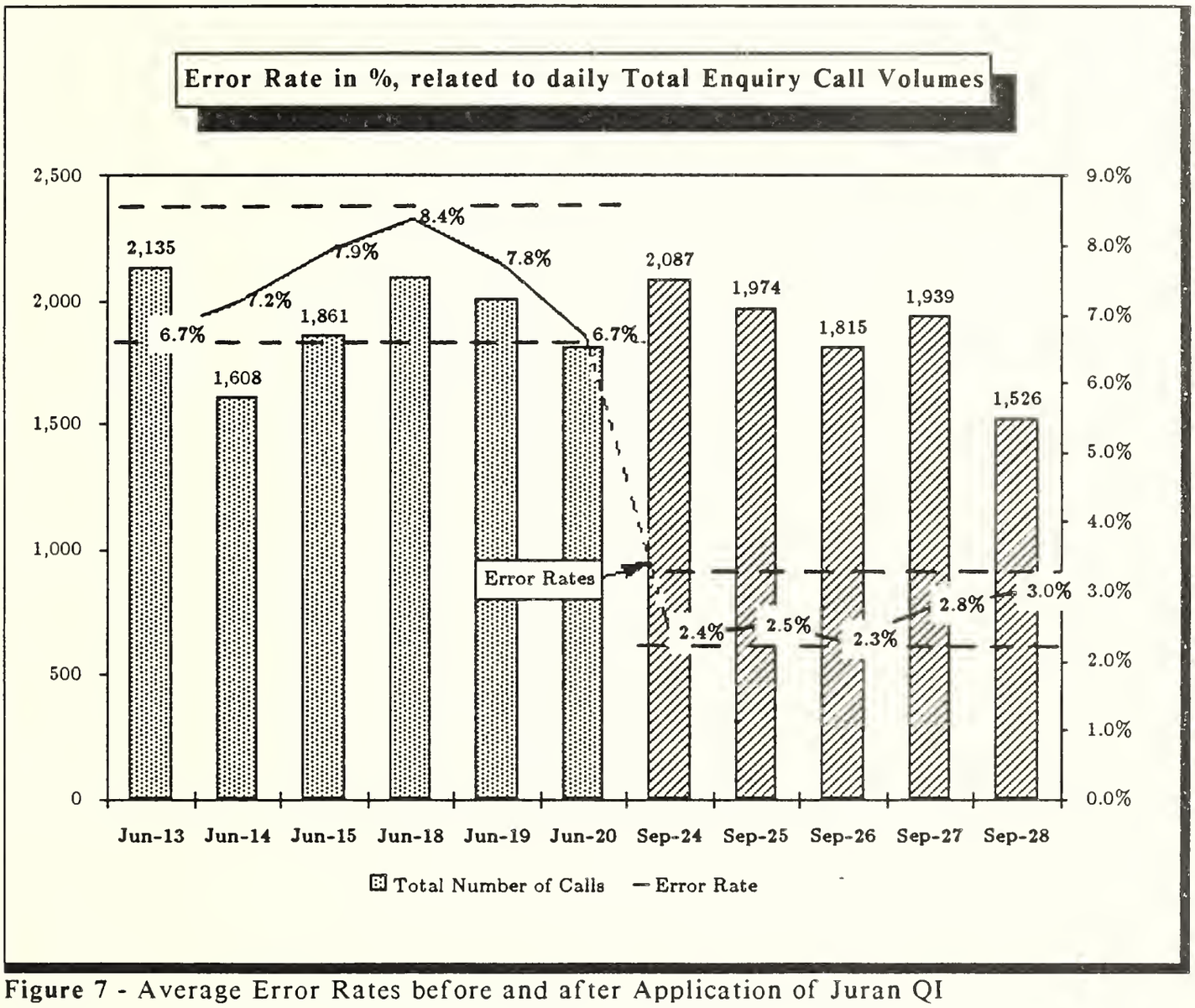
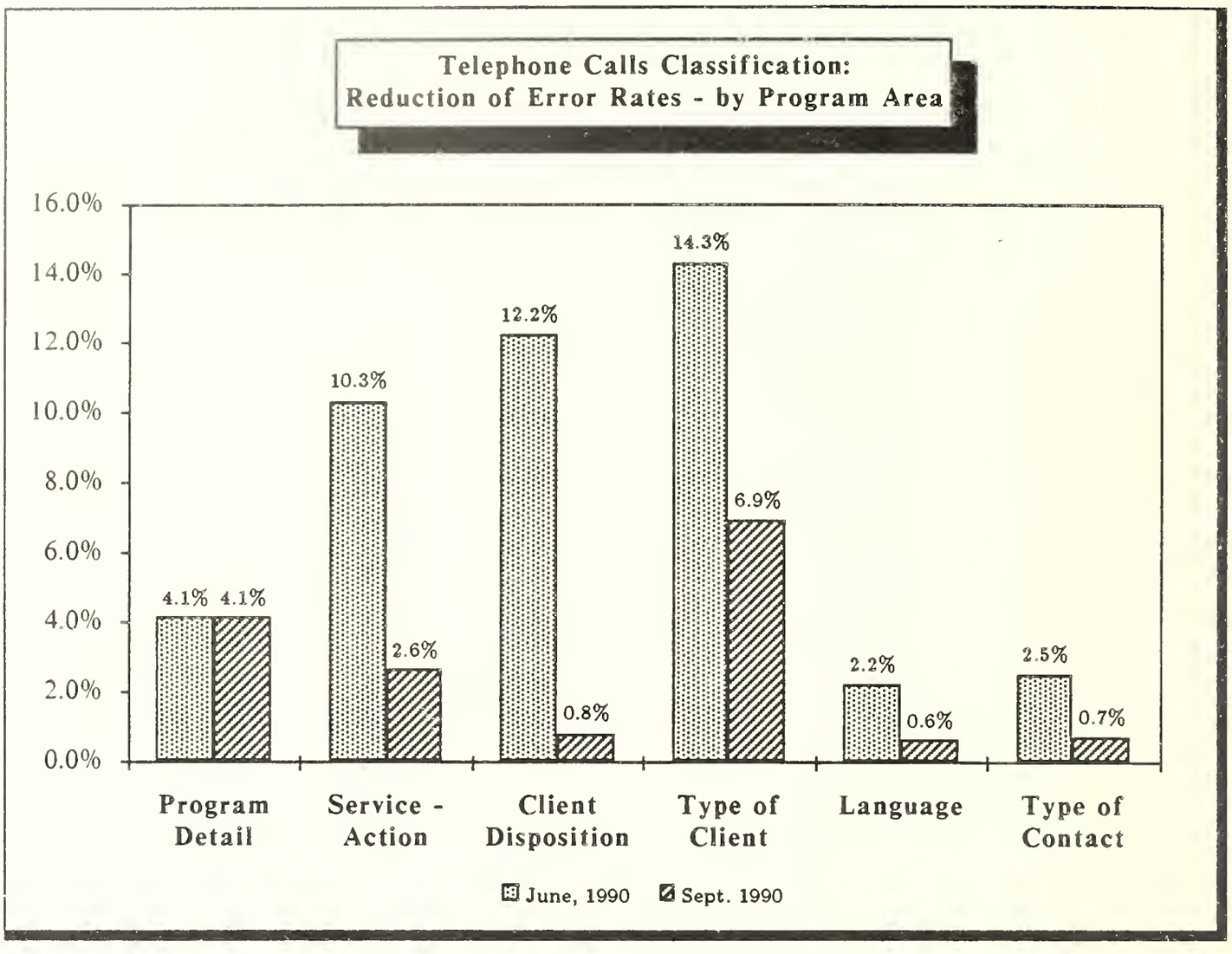


Figure 7 - Average Error Rates before and after Application of Juran QI

In addition to the lowering of the average error rate, it will also be noted that the bands within which these errors occur is considerably narrower now than before this quality improvement project. The data supporting this improvement in terms of the number of classification errors, by program, is provided at Appendix 'E', on pages 28 & 29.



Program Area	Sample Size	Number of Errors	Average % Error
Program Detail Classification	723	59	4.1%
Service/Action Description	723	38	2.6%
Client Disposition	723	12	0.8%
Type of Client	723	100	6.9%
Language	723	9	0.6%
Type of Contact	723	10	0.7%
Totals	4,338	228	2.6%

Figure 8 - Reduction of Error Rate - by Program Area

Reduction of Error Rates - by Program Area

The charts on the preceding page - Figure 8 - demonstrate the level of improvement achieved due to the Juran Quality Improvement (JQI) process in the customer service environment. Although the change in average error rates is noteworthy, the **improvement is considerably higher in some of the program call classification areas where the coding format was changed, most significantly:**

- 'Client Disposition', 'Service/Action' and 'Type of Client'. The reduction in error rates is particularly impressive for data classification in these three areas, affected by the highest error ratings in the June analysis;

- 'Client disposition', 'Language' and 'Type of Contact'. It is particularly noteworthy that in these three areas, the September results indicate an error rate reduction to under 1%. This result seems to confirm that it is indeed possible for PIOs to overcome the data input systems error threshold established earlier by dedicated data entry staff and viewed then as the miminum error attainable;

- Classification of 'Program Detail' was left unaltered since the June survey. In that the indirect effect of this decision was to provide a control model, it is also somewhat gratifying to note that the resulting error rate for this classification category - 4.1% - is identical to the June figure.

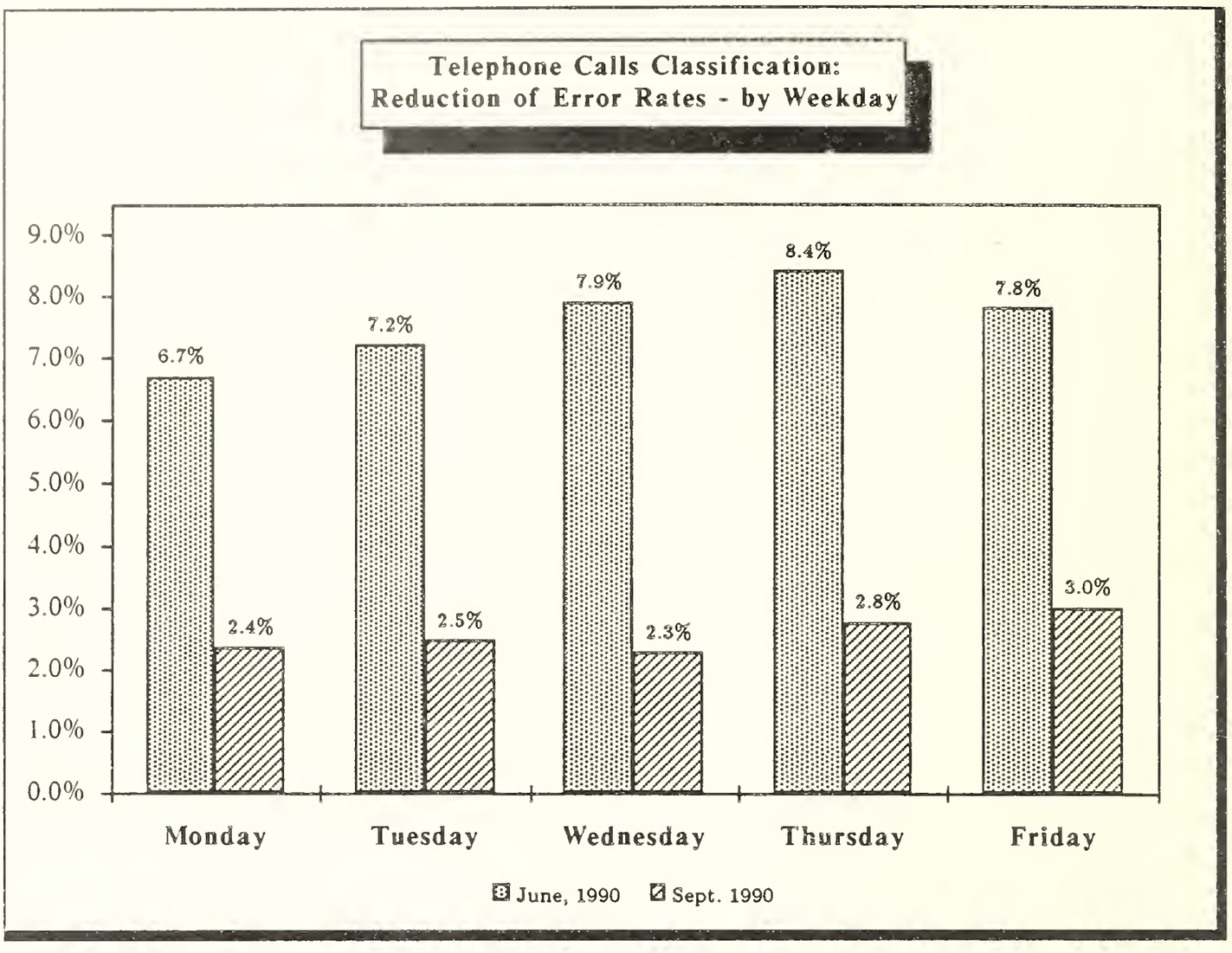
- The overall improvement according by the day in the week is uniform - and close to the average - throughout, as illustrated in Figure 9 on the next page.

Observation about Use of automated Data Entry System

During the analysis phase it was noted on several occasions that some errors were also due to carelessness. These errors were caused on paper, when tick marks were used to indicate a repeat entry of the preceding classification. This practice resulted in some errors when the one-time interruption in a pattern was not corrected, until the pattern was again interrupted by a change.

In that the computer data entry system now provides a convenient repeat entry 'window frame', the same errors can be committed there without being detected quite as readily. This cause can only be overcome through training and calls for operational vigilance at all times.

Apart from this shortcoming, the response to the two surveys was generally extremely good and deserving a special mention.



Weekday		Sample Size	Number of Errors	Average % Error
Monday	(9/24/1990)	894	42	2.4%
Tuesday	(9/25/1990)	635	31	2.5%
Wednesday	(9/26/1990)	690	31	2.3%
Thursday	(9/27/1990)	957	53	2.8%
Friday	(9/28/1990)	1,161	70	3.0%
Totals:		4,338	228	2.6%

Figure 9 - Reduction of Error Rate - by Day of Week

Impact of Call Volumes on Average Error Rate

Although it was not the intention of this project to provide the proof to link the volumes of calls processed to the error rate, there is sufficient evidence to suggest that **the overall error rate declines with increasing volumes of calls.**

This phenomenon, illustrated in Figure 10 below, appears to be largely due to increases associated with major periodic program activities, such as the mailing of OTG cheques, OPPTA applications and EHT quarterly remittance statements. With the growing volumes of calls associated with these program activities, the resulting repetition of common enquiries also results in a general lowering of the associated error rate.

Conversely, for programs with relatively few calls, the error rate is noticeably higher than the average, some in excess of 20%. These high errors rates are effectively offset by very low error rates linked to the large number of telephone enquiries for federal or other Ontario government programs, where service largely consists of providing their telephone number.

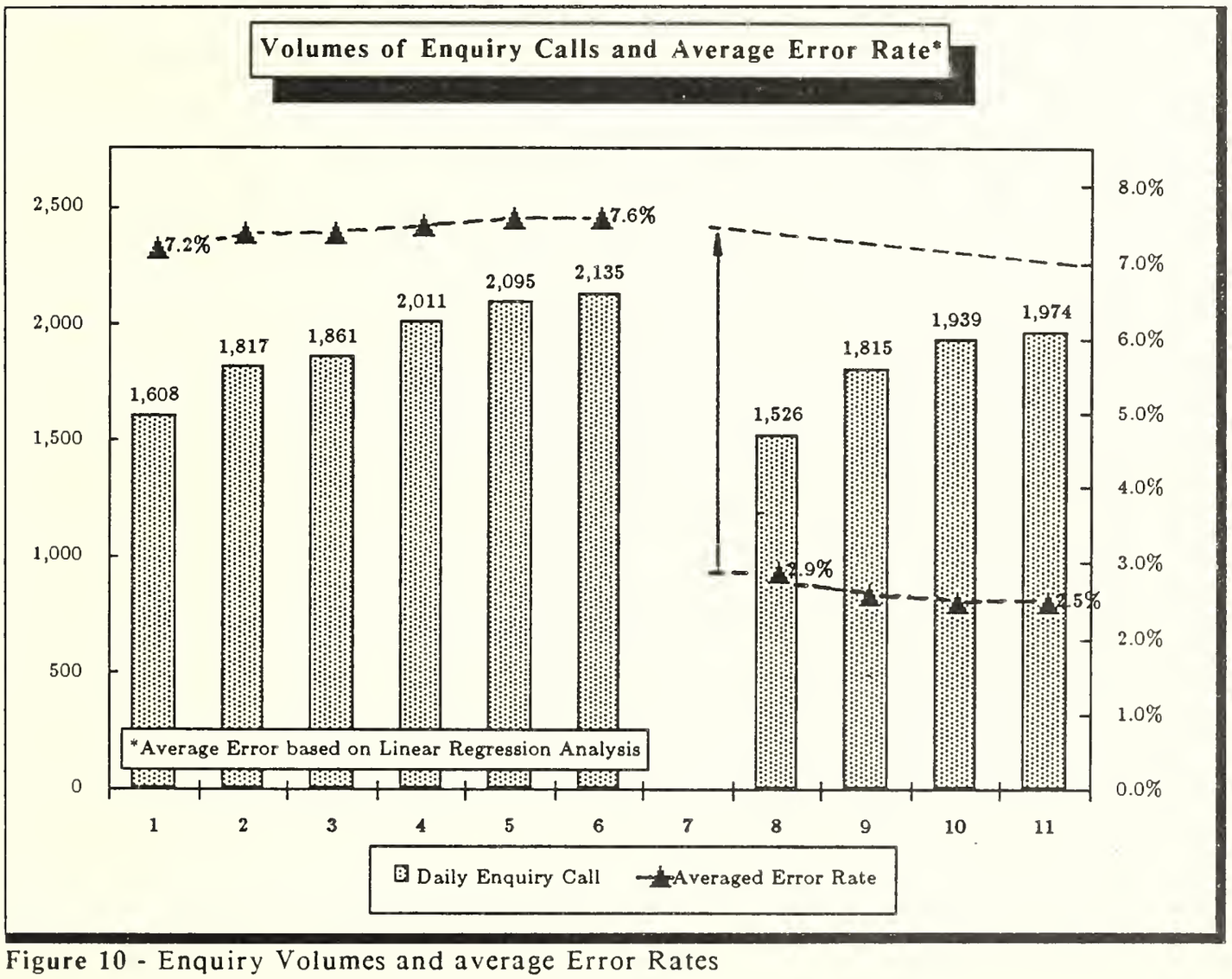


Figure 10 - Enquiry Volumes and average Error Rates

Impact on Cost

The actual cost saving due this quality improvement project cannot be appraised precisely, because the improvement applies to only a portion of the total taxpayer service function. However, assuming that the same error criteria also apply to the entire customer service function, the potential for cost improvement may be determined as follows:

Total 1989/90 Budget, including staff salaries, benefits, telephone trunk and line charges	$1,658,868
Number of Telephone Calls processed	617,427
Average cost per call	$2.69
At a 7.6% error rate, the unproductive cost component is:	$126,074
Net unproductive cost at a 2.6% residual error rate:	$ 43,130
The potential benefit of quality improvement if fully realized:	$ 82,944
If the benefit from data capture improvement is assumed at 25% of the total customer service function, then the saving would amount to	$21,000

Impact on Management Time

The data captured and processed in this process is ultimately presented in a report format in part illustrated in Appendix 'F', on pages 30 to 32. Since the system has been operation for two months, first indications from satisfied users are that the **management time required for monthly results planning and forecasting has already been reduced from an earlier one to one-and-half hours to under ten minutes for the same job.**

Regardless of the true potential for dollar savings, the greatest benefit of these improvements is an intangible one: Knowledge of the statistical data parameters that will enable management and planners to apply the resulting information with greater confidence and accuracy. The resulting positive impact on future decisions is bound to outweigh the net cost savings by a wide margin.

Conclusions

Following analysis, this project leads to the following conclusions:

1. The Juran quality improvements applied to the TSB data capture functions have resulted in an improvement of the associated error rates from 7.6% to a residual low 2.6%.

2. While it was originally believed that the residual error rate could not be reduced below the data entry error rate of 1.8% obtained from dedicated data entry staff, this assumption has been dispelled: In some areas the total error rate has already been reduced to under 1%.

3. Further to the improvements made to date, it now appears highly possible to make further enhancements through additional streamlining of the classification system; it would, however, be prudent to permit the system to 'settle down' for another two to three months before embarking on the next stage of quality improvement;

4. The analysis revealed a number of incidents that point to carelessness in data entry; these shortcomings can only be remedied through emphasis during training and greater awareness to the need for accuracys and vigilance;

5. The system can continue to benefit from periodic monitoring surveys and review at intervals of between 4 to 6 months; this process will ensure that gains made will be maintained, or further improved upon.

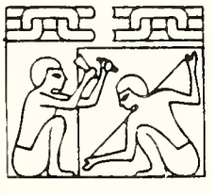
6. **The greatest benefit of these improvements is an intangible one: The knowledge of statistical data parameters, that will enable managers and planners to apply the resulting information with greater confidence, with a corresponding positive impact on future decisions.**

The Ontario Ministry of Revenue

Taxpayer Information Services

Juran Quality Improvements
applied to the TIS Statistical Reporting System

Appendices



Marketing Services
Taxpayer Services Branch
November 9th, 1990

PROJECT PARTICIPANTS

Team Members:

Baker, Jan (TIC Supervisor)	Project Leader
Schauer, James A. (Manager, Marketing Services)	Project Secretary
Browne, Helene (TIC Supervisor)	Team Member
Nigro, Diego (Senior Manager)	Team Member, until 1 Aug.'90
Proc, Mary (Branch Director)	Team Member, until 1 Aug.'90

Supporting Groups:

All Telephone Information Centre Staff	Call Classification
Data Entry Support Staff	Data Input Support
Information Technology Division Team:	Systems Development Support Team:
Michael Koster	Systems Manager
Peter Au	Project Leader
S. Cruickshank	Programmer/Analyst

Appendix 'B'

Telephone Call Classification System

April 24, 1990

1. By Program

GITC	EHT	MFTT
10 OTG	20 EHT	30 LAND TAX
11 GAINS	21 CHARGEBACK	31 SBDC
12 OTC	22 OVERLAP	32 IJC
13 OHOSP	23 OHIP COVERAGE	33 GAS & FUEL
19 OTHER	29 OTHER	34 PROPANE
		35 TOBACCO
		36 SUCCESSION DUTY
		37 GIFT
		39 OTHER
CT	**RST**	**Assessment**
40 CT	50 RST	60 ASSESSMENT
49 OTHER	51 OI	61 CCT
	59 OTHER	62 ENUMERATION
		69 OTHER
Federal	**Provincial Budget**	**Other**
70 REV. CANADA	80(0) SERIES	90 APPEALS
71 OAS/GIS	To be determined at Budget time	91 FOI
72 FEDERAL EXCISE		99 OTHER
73 GST		
79 OTHER		

2. Service/Action

0. GENERAL INFORMATION	5. MESSAGE	10. REMITTANCE
1. ACTION/CLIENT ENQ.RPT	6. REGISTRATION	11. OTG/GAINS RPTS
2. PUBS & FORMS RPT	7. CLOSE-OUTS	12. ACTION/FORMS & PUBS
3. ASSISTANCE (e.g., WITH FORMS)	8. TAX ROLL MAINTENANCE	13. INTERPRETATIONS (MORIC)
4. REFERRAL(INCL.TRANS)	9. OTHER	

3. Client Disposition

0. POSITIVE	3. IRATE	5. DEFUSED
1. NEUTRAL	4. COMPLAINT	9. OTHER
2. NEGATIVE		

4. Type of Client

0. INDIVIDUAL CLIENT	3. PROFESSIONAL	5. MEDIA
1. INDIVIDUAL 3rd PARTY	4. MP/MPP OR VIP	9. OTHER
2. BUSINESS		

5. Language

0. ENGLISH	2. BILINGUAL	9. OTHER
1. FRENCH	3. TDO	

6. Type of Contact

0. IN-COMING CALL	2. WALK-IN ENQ.	4. FAX
1. OUT-GOING CALL	3. OUTREACH VISIT	9. OTHER

Telephone Call Classification System
April, 1990

Explanation of Terms:

Most of the terms are self-explanatory.

"OTHER" listed under each of the categories encompasses any category that is not listed.

The following are expanded explanations for unclear terms.

Service/Action:

0. General Information
1. Action/Client Enquiry Report
2. Publications & Forms Report
3. Assistance (eg with forms):
   OTG, RST Vendor Permit Application, EHT information request or OAS/GIS
4. Referral (includes transfers):
   to an external agency
6. Registration - on line
7. Close-out
8. Tax Roll Maintenance:
   ie: on-line changes of name and address
9. Other
10. Remittance:
    assistance in completing tax remittance form and/or return card
11. OTG/GAINS
    OTG/GAINS Reports
12. ACTION/FORMS PUB.
    ie: request for forms and pubs and action report
13. INTERPRETATIONS
    MORIC offices only

Client's Disposition

Self-explanatory

Defused - client initially upset or irate and is defused due to information obtained.

Type of Client

0. Individual Client
1. Individual 3rd party
2. Business:
   Representative of a business
3. Professional:
   Accountant, Lawyer, etc.
4. MP/MPP or VIP:
   DM, ADM or a Minister

Language

0. English
1. French
2. Bilingual - Outreach w. 2 reps.
3. TDD - Telephone Device for the Deaf
9. Other

May 16, 1990

Appendix 'C'

Telephone Enquiry Statistics: Data Input Errors

Data Entry Verification

Report Date	Categories Verified	Sub - Category	Sample Size	Diff.	Mean Dev. in %
Jun-15	GITC Programs		391	6	1.5%
Jun-18	GITC Programs		535	9	1.7%
Jun-19	GITC Programs		462	10	2.2%
Jun-20	GITC Programs		421	1	0.2%
Jun-21	GITC Programs		396	2	0.5%
Jun-22	GITC Programs		333	15	4.5%
	Totals:		2,538	43	1.7%

For selected Report Categories:

Jun-15	Contact	Out	79	3	3.8%
Jun-18	Contact	Out	85	1	1.2%
Jun-19	Contact	Out	50	1	2.0%
Jun-20	Contact	Out	52	2	3.8%
Jun-21	Contact	Out	61	1	1.6%
Jun-22	Contact	Out	47	1	2.1%
Jun-15	Contact	Other	5	0	0.0%
Jun-18	Contact	Other	8	0	0.0%
Jun-19	Contact	Other	1	0	0.0%
Jun-20	Contact	Other	1	0	0.0%
Jun-21	Contact	Other	6	0	0.0%
Jun-22	Contact	Other	9	0	0.0%
	Contact Category Sub-Total		404	9	2.2%

For Language Category:

Jun-15	Language	French	30	2	6.7%
Jun-18	Language	French	23	1	4.3%
Jun-19	Language	French	34	1	2.9%
Jun-20	Language	French	32	0	0.0%
Jun-21	Language	French	27	0	0.0%
Jun-22	Language	French	24	0	0.0%
Jun-18	Language	Bilingual	4	0	0.0%
Jun-19	Language	Bilingual	1	0	0.0%
Jun-20	Language	Bilingual	3	0	0.0%
Jun-18	Language	Other	1	0	0.0%
Jun-19	Language	Other	2	0	0.0%
Jun-20	Language	Other	2	0	0.0%
Jun-21	Language	Other	1	0	0.0%
Jun-22	Language	Other	2	0	0.0%
	Language Category Sub-Total		186	4	2.2%

Telephone Enquiry Statistics: Data Input Errors

Data Entry Verification

S u m m a r y :

	Sample	Varied	Error Rate
A l l C a t e g o r i e s :	3,128	56	1.8% *

SYSTEM10.XLS

* sd = 0.017628171

Observations concerning the Recording of Data on Source Sheets by PIOs:

1. There is no standard for writing of numbers; occasionally the writing style o numbers vary within individual sheets. This practice results in ambiguities when entering data.

2. Ambiguities also arise where numbers are altered or written over, instead of clearly crossing out the original data (or using corrective white).

3. To avoid ambiguity, it is suggested that "--", "o", or "0" not be used to indicate blank fields, since this practice does not facilitate input.

4. Detail comments written into contact columns, i.e. "disconnected", "wrong #", "trunk #", or names of MPPs cannot be programmed and are thus lost.

5. Where non-existing program identification numbers, e.g. "55", are entered on the record source sheets, data for these calls cannot be entered, resulting in wasted effort.

Appendix 'D'

TIC CALL CLASSIFICATION

Revised Version Page 1, with Explanatory Notes

Revenue Programs:

GITC (GI)	EHT (EH)	MFTT (MF)
OG OTG	EH EHT	LL Land Tax
GA GAINS	OH OHIP Coverage	SB SBDC
OC OTC	OO Other EHT	IJ IJC's
OH OHOSP		GF Gas/Fuel Tax
OO Other GITC		PP Propane
		TT Tobacco Tax
		OO Other MFTT
CT (CT)	**RST (RS)**	**Assessment (AS)**
CT Corporations Tax	RS Retail Sales Tax	AS Assessment
OO Other CT	OI Ontario Incredible	EN Enumeration
	OO Other RST	CC CCT
		OO Other Assessment
Federal Programs (FD)	**Ontario Budget (BU)**	**Other Programs (OP)**
RC Revenue Canada	800 Series to 899:	TA Tax Appeals
OA OAS / GIS	To be determined	FO FOI
EX Excise		OO Other
GS GST		
OO Other Federal		

Service / Action:

IP	Information Provided
AA	Application Assistance
RE	Report *
ME	Message
RG	Registration
TR	Tax Roll Maintenance **
CX	Close-Outs
PU	Publications / Forms Requests
OO	Others

Verbal explanation/clarification, provision of phone numbers

IO helps client complete application.

* Caller requires information that I cannot provide - necessitating a written report

** Includes terminal updates, e.g. status changes, change of address etc.

Caller requests publications / forms to be mailed

TIC CALL CLASSIFICATION

Revised Version Page 2, with Explanatory Notes

Client Disposition:

	At Start of Call	-	At End of Call
NS	Neutral	-	Satisfied
ND	Neutral	-	Dissatisfied
IS	Irate	-	Satisfied
ID	Irate	-	Dissatisfied

Caller's reaction at first contact with PIO, followed by her/his reaction to the information provided by the PIO

Type of Client:

CC	Client
MP	MPP / MP
OO	Anyone other than the client or MP / MPP

"Client" includes grant recipients, and owners, managers or employees of a business; it does not include relatives or other third parties (e.g. accounting firms, lawyers, etc.)

NB: Classify all relatives, 3rd parties, and callers enquiring about other ministries' programs as 'Other' (OO)

Language:

EE	English
FR	French
OO	All Others

Type of Contact:

IN	In-coming Enquiry	Includes 'phone calls, FAX, mail
OU	Out-going Enquiry	Includes callbacks, outreach
WI	Walk-in Clients	PEC and MORIC
OO	Others	

Notes:

Some earlier "Service/Action" terms are now covered as follows:

"Transfers" — "Transferring IO" does not provide any information; therefore the call is recorded only by the IO dealing with the client.

"Referral" — "Referral" is providing the client with some information; therefore the call would be captured under the appropriate program and recorded as "information" action

Appendix 'E'

Telephone Enquiry Classification: Basic Error Rates

based on Tests conducted during Period June 13 to 20, 1990

Overview by Program Group:

Program	Number of Call Sheets with:								Distribution:	
	No Errors	%	One Error	%	Two Errors	%	Three Errors	%	No. of Calls	Per Cent
Corporations Tax	6	2.4%	4	1.6%	2	0.8%			12	4.9%
EHT	38	15.4%	26	10.5%	26	10.5%	1	0.4%	91	36.8%
GITC - GAINS	7	2.8%	3	1.2%					10	4.0%
GITC - OHOSP	11	4.5%	3	1.2%	1	0.4%			15	6.1%
GITC - OTC	1	0.4%	1	0.4%					2	0.8%
GITC - OTG	17	6.9%	12	4.9%	4	1.6%			33	13.4%
MFTT	8	3.2%	6	2.4%	3	1.2%	1	0.4%	18	7.3%
Retail Sales Tax	0	0.0%	3	1.2%	3	1.2%			6	2.4%
Federal OAS/GIS	1	0.4%	1	0.4%					2	0.8%
Other Federal	21	8.5%	9	3.6%					30	12.1%
Others & Transfers	14	5.7%	9	3.6%	4	1.6%	1	0.4%	28	11.3%
T o t a l	124	50.2%	77	31.2%	43	17.4%	3	1.2%	247	100.0%

TICERR11.XLS

Analysis Assessment:

Number of Calls reviewed:	247
Total Information Items tested:	1,482
Total Number of Differences:	172
Standard deviation:	0.0379
Low Error Rate:	5.0%
High Error Rate:	6.6%

Average Error Rate: 5.8 %, plus or minus 0.8 %

Telephone Enquiry Classification: Basic Error Rates

based on Tests conducted during Period September 24 to 28, 1990

Overview by Program Group:

Program	Number of Call Sheets with:								Distribution:	
	No Errors	%	One Error	%	Two Errors	%	>Three Errors	%	No. of Calls	Per Cent
Corporations Tax	23	3.2%	10	1.4%					33	4.6%
EHT	109	15.1%	32	4.4%	2	0.3%	2	0.3%	145	20.1%
GITC - GAINS	37	5.1%	8	1.1%			1	0.1%	46	6.4%
GITC - OHOSP	27	3.7%	5	0.7%	2	0.3%	1	0.1%	35	4.8%
GITC - OTC	1	0.1%	1	0.1%		0.0%			2	0.3%
GITC - OTG	153	21.2%	35	4.8%	5	0.7%	1	0.1%	194	26.8%
MFTT	39	5.4%	12	1.7%			1	0.1%	52	7.2%
Retail Sales Tax	15	2.1%	9	1.2%	1	0.1%			25	3.5%
Federal OAS/GIS	8	1.1%	4	0.6%	1	0.1%	1	0.1%	14	1.9%
Other Federal	70	9.7%	11	1.5%	1	0.1%	1	0.1%	83	11.5%
Others & Transfers	67	9.3%	23	3.2%	3	0.4%	1	0.1%	94	13.0%
T o t a l	549	75.9%	150	20.7%	15	2.1%	9	1.2%	723	100.0%

TICERR21.XLS

Analysis Assessment:

Number of Calls reviewed:	723
Total Information Items tested:	4,338
Total Number of Differences:	228
Standard deviation:	0.0179
Low Error Rate:	2.3%
High Error rate:	3.0%

Average Error Rate: 2.6 %, plus or minus 0.4 %

TAXPAYER SERVICES BRANCH

1. DAILY INCOMING CALLS FOR:

Location: Oshawa **Date:** November 9th, 1990

Program	Daily Calls	Monthly Totals	%	Year To Date Totals	%
GITC					
OTG	356	1,601	5.7%	1,957	5.9%
GAINS	83	397	1.4%	480	1.4%
OTC	108	512	1.8%	620	1.9%
OHOSP	122	556	2.0%	678	2.0%
GITC - Other	9	35	0.1%	44	0.1%
GITC Totals	678	3,101	11.0%	3,779	11.3%
EHT					
EHT	3,688	22,506	79.6%	26,194	78.7%
OHIP Coverage	74	364	1.3%	438	1.3%
EHT - Other	1	21	0.1%	22	0.1%
EHT Totals	3,763	22,891	80.9%	26,654	80.0%
Motor Fuel and Tobacco Taxes					
Land Tax	61	311	1.1%	372	1.1%
SBDC	5	60	0.2%	65	0.2%
IJCs	4	15	0.1%	19	0.1%
Gas & Fuel	13	67	0.2%	80	0.2%
Propane		2	0.0%	2	0.0%
Tobacco	1	4	0.0%	5	0.0%
MFTT - Other	4	10	0.0%	14	0.0%
MFTT Totals	88	469	1.7%	557	1.7%
Corporations Tax					
Corporations Tax	30	165	0.6%	195	0.6%
CT - Other	1	4	0.0%	5	0.0%
Corporations Tax Totals	31	169	0.6%	200	0.6%

Program	Daily Calls	Monthly Total	%	Year to Date Totals	%
Incoming Calls, continued:					
Retail Sales Tax					
RST	39	169	0.6%	208	0.6%
Ontario Incredible	19	73	0.3%	92	0.3%
RST - Other	1	8	0.0%	9	0.0%
Retail Sales Tax Totals	59	250	0.9%	309	0.9%
Property Tax Assessment					
Assessment	2	6	0.0%	8	0.0%
Enumeration			0.0%	0	0.0%
CCT			0.0%	0	0.0%
Assessment - Other		1	0.0%	1	0.0%
Assessment Totals	2	7	0.0%	9	0.0%
Federal Programs					
Revenue Canada	205	653	2.3%	858	2.6%
OAS/GIS	38	114	0.4%	152	0.5%
Excise Tax	2	12	0.0%	14	0.0%
GST	3	10	0.0%	13	0.0%
Federal - Other	7	20	0.1%	27	0.1%
Federal Totals	255	809	2.9%	1,064	3.2%
Provincial Budget					
For Details see Pages 4 & 5	10	100	0.4%	110	0.3%
Budget Totals	10	100	0.4%	110	0.3%
Other Programs					
Tax Appeals	2	7	0.0%	9	0.0%
FOI				0	
All Others	128	482	1.7%	610	1.8%
Others Totals	130	489	1.7%	619	1.9%

Appendix 'F'

Program	Daily Calls	Monthly Total	%	Year to Date Totals	%
Incoming Calls, continued:					
Totals all Programs					
Ontario Grant Programs	678	3,101	11.0%	3,779	11.3%
Ontario Taxation Programs	3,941	23,779	84.1%	27,720	83.2%
Property Tax Assessment	2	7	0.0%	9	0.0%
Federal Programs	255	809	2.9%	1,064	3.2%
Ontario Budget	10	100	0.4%	110	0.3%
Other Enquiries	130	489	1.7%	619	1.9%
	5,016	28,285	100.0%	33,301	100.0%

	DATE DUE		

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HF/5415.5/.T39/1990
Ontario. Ministry of Reven
Taxpayer information
services : juran foet
c.1 tor mai